

WHAT IS CLAIMED IS:

1. A method for reducing false detects, comprising:
emitting an infrared light beam from a primary emitter to a primary monitor detector;
measuring a first voltage value using a primary receive detector;
setting a primary smoke alarm flag corresponding to a primary channel if the first voltage value is above a first threshold value;
measuring a second voltage value using a secondary receive detector;
setting a secondary smoke alarm flag corresponding to a secondary channel if the second voltage value is above a second threshold value; and
setting an alarm indicating a smoke condition if the primary smoke alarm flag and the secondary smoke alarm flag are set.
2. The method as defined in claim 1, further comprising determining a calibration level for the primary channel representing a scatter count of the air.
3. The method as defined in claim 2, wherein the first threshold value is equal to the calibration level for the primary channel plus a smoke count value that is equal to a three percent smoke value of the air.
4. The method as defined in claim 1, further comprising determining a calibration level for the secondary channel representing a scatter count of the air.
5. The method as defined in claim 4, wherein the second threshold value is equal to the calibration level for the secondary channel plus a smoke count value that is equal to a three percent smoke value of the air.

6. The method as defined in claim 1, further comprising emitting an infrared light beam from a secondary emitter to a secondary monitor detector.

7. The method as defined in claim 6, further comprising setting a disable flag corresponding to the secondary channel if the secondary monitor detector is not capable of receiving the infrared light beam from the secondary emitter.

8. The method as defined in claim 1, further comprising setting a disable flag corresponding to the primary channel if the primary monitor detector is not capable of receiving the infrared light beam from the primary emitter.

9. The method as defined in claim 8, further comprising setting a maintenance fault flag for the primary channel if the disable flag for the primary channel is set.

10. The method as defined in claim 9, further comprising switching the secondary channel to the primary channel if the maintenance fault flag for the primary channel is set.

11. The method as defined in claim 1, wherein the first threshold value is equal to the second threshold value.

12. A method for reducing false detects using an aircraft smoke detection system capable of simultaneously operating a primary channel and a secondary channel, the method comprising:

transmitting light from a first emitter to a first monitor detector;

receiving a portion of the light using a first receive detector;

determining a primary voltage by measuring the portion of the light received from the first receive detector and if the primary voltage is greater than a primary threshold value, then setting a smoke alarm flag for the primary channel;

receiving a portion of the light using a second receive detector;

determining a secondary voltage by measuring the portion of the light received from the second receive detector and if the secondary voltage is greater than a secondary threshold value, then setting a smoke alarm flag for the secondary channel;
and

transmitting an alarm signal when the smoke alarm flag for the primary channel and the smoke alarm flag for the secondary channel are set.

13. The method as defined in claim 12, further comprising transmitting light from a second emitter to a second monitor detector.

14. The method as defined in claim 12, wherein the primary threshold value is greater than or equal to a one percent smoke value.

15. The method as defined in claim 12, wherein the secondary threshold value is greater than or equal to a one percent smoke value.

16. The method as defined in claim 12, further comprising:
setting a maintenance fault flag for the primary channel if the first monitor detector is not capable of receiving the light from the first emitter; and
switching the secondary channel to the primary channel if the maintenance fault flag for the primary channel is set.

17. An aircraft smoke detection system comprising:
a central processing unit; and

a smoke detector unit for receiving control signals from the central processing unit, the smoke detection unit including:

- a chamber having an inlet for allowing air and smoke to enter the chamber;

- a first emitter, positioned in the chamber, for emitting light along a path;

- a first monitor detector, positioned along the path of the emitted light, for receiving the emitted light from the first emitter; and

- a first receive detector, positioned off the path of the emitted light, for receiving a portion of the emitted light when smoke passes between the first emitter and the first monitor detector causing the emitted light to scatter and for transmitting a first smoke alarm signal to the central processing unit.

18. The system as defined in claim 17, further comprising a fan for moving the air and smoke from the inlet to the chamber.

19. The system as defined in claim 17, wherein the smoke detector unit further includes:

- a second emitter, positioned in the chamber, for emitting light along a path;

- a second monitor detector, positioned along the path of the emitted light, for receiving the emitted light from the second emitter; and

- a second receive detector, positioned off the path of the emitted light, for receiving a portion of the emitted light when smoke passes between the second emitter and the second monitor detector causing the emitted light to scatter and for transmitting a second smoke alarm signal to the central processing unit.

20. The system as defined in claim 19, wherein the central processing unit transmits an alarm signal to a cockpit warning system after receiving the first smoke alarm signal and the second smoke alarm signal.